

**WHAT IS CLAIMED IS:**

1. A method of dyeing a polymer, the method comprising dispersing a nanomaterial into the polymer to form a polymer nanocomposite, and dyeing the polymer nanocomposite with a dye.
2. The method of claim 1, wherein the polymer is a polyvinyl, epoxy resin, polyolefin, polyamide, aromatic polyamide, polyimide, polyanhydride, acrylic polymer, polyester, polyimine, polysaccharide, polypeptide, polylactone, or a random or block copolymer thereof.
3. The method of claim 1, wherein the polymer is a polyolefin.
4. The method of claim 3, wherein the polyolefin is polypropylene.
5. The method of claim 1, wherein the nanomaterial is nanoclay, nanosilica, metal oxide, zeolite, or nanoparticles of a polymer.
6. The method of claim 1, wherein a nanomaterial is pretreated with a surfactant for improved compatibility with the polymer.
7. The method of claim 1, wherein a weight ratio of the nanomaterial to the polymer is in the range of 0.01-20%.
8. The method of claim 1, wherein the weight ratio of the nanomaterial to the polymer is in the range of 0.5-5%.
9. The method of claim 1, wherein the nanomaterial is intercalated or exfoliated in the polymer.

10. A dyed polymer comprising a dye, a polymer, and a nanomaterial, wherein the nanomaterial is dispersed in the polymer to form a polymer nanocomposite, and the dye is linked to the nanomaterial.
11. The dyed polymer of claim 10, wherein the polymer is a polyvinyl, epoxy resin, polyolefin, polyamide, aromatic polyamide, polyimide, polyanhydride, acrylic polymer, polyester, polyimine, polysaccharide, polypeptide, polylactone, or a random or block copolymer thereof.
12. The dyed polymer of claim 10, wherein the polymer is a polyolefin.
13. The dyed polymer of claim 12, wherein the polymer is polypropylene.
14. The dyed polymer of claim 10, wherein the nanomaterial is nanoclay, nanosilica, metal oxide, zeolite, or nanoparticles of a polymer.
15. The dyed polymer of claim 14, wherein the nanomaterial is pretreated with a surfactant for improved compatibility with the polymer.
16. The dyed polymer of claim 10, wherein the weight ratio of the nanomaterial to the polymer is in the range of 0.01-20%.
17. The dyed polymer of claim 10, wherein the weight ratio of the nanomaterial to the polymer is in the range of 0.5-5%.
18. The dyed polymer of claim 10, wherein the nanomaterial is intercalated or exfoliated in the polymer.
19. An article made of the dyed polymer of claim 10.